Haorui Zhang HW1

1. The first computer's name is ABC (Atanasoff-Berry Computer). The first general-purpose computer is ENIAC (Electronic Numerical Integrator And Computer). ENIAC's memory can hold 20 10-digit decimal numbers (80 bytes). Nowadays, a $400 laptop usually have 4-8 GB memory (4000000000 – 8000000000 bytes). A $500 phone can have 4 GB memory size (4000000000 bytes).
2. Today's processors roughly get 2000 times faster.
3. Instruction sets:
    1. Set 5 numbers as an array. (array x = [a,b,c,d,e,f])
    2. Compare the second number with the fourth number. If the second number is larger than the fourth number, switch positions. If they are the same, or the second number is smaller than fourth number, then no change.
    3. Repeat the second step with the first and fifth number.
    4. Compare the first number with the second number. If the first number is larger than the second number, then switch the position. If they are the same or the first number is smaller than the second number, then no change.
    5. Repeat the forth step with the fourth and fifth number.
    6. Compare the third number with the second number. If the second number is smaller than the third number, then switch the position. If the second number is larger than the third number or they are the same, then no change.
    7. Repeat the sixth step with the third number and the forth number.
    8. If sixth step happens, compare the second number with the first number. If the first number is larger than the second number, switch the position. If they are the same or the first number is smaller than the second number, then no change.
    9. If seventh step happens, compare the fourth number with the fifth number. If the fifth number is smaller than the fourth number, switch the position. If they are the same or the fifth number is larger than the fourth number, no change.
    10. Compare the third number and the second number. If the second number is larger than the third number, change the position. Otherwise, no change.
    11. Finish
4. Programs:
    a. If(Empty(D_3)
    {Put(D_3);}
    Else //Overflow
    {
    Eat(D_3);
    If(Empty(D_4))
    {Put(D_4);}
    Else//Overflow

    {Eat(D_4);}

}

5. Averagely it’s 1.